

Amendments to the Specification:

On page 1, before the first line of the specification, please insert the following new paragraph:

This application claims the benefit of German Application No. 102 14 254.8 filed 30 March 2002 and PCT Published Application No. WO 03/083778 filed 24 March 2003.

Please amend the last paragraph beginning on page 7, line 27 and continuing to page 8, line 6 to read as follows:

The reconstruction of an image from the segmented SPECT image data set S8 by way of iterative backprojection will be described with reference to Fig. 3. The iteration consists in that first, in a backprojection S10, an iteration image R11 is calculated by backprojection of the image data to be imaged of the first image data set R6, selected on the basis of the second image data set or the image R1, R3, after which an iteration image data set R12 is numerically formed from this iteration image R11 in a calculation step S11. This iteration image data set R12 thus represents the result of a numerical forward projection S11 of the calculated image. Subsequently, a difference is formed S12 between the numerically formed iteration image data set R12 and the first image data set R10. This difference is a measure of the deviation between the iteration image data set R12 and the iteration start image data set R10. If this difference is particularly small S13, the calculated image does not constitute a significant qualitative improvement relative to the initially calculated image. In this case the iterative calculation process is terminated and the calculated image R11, R7 is output via an output S20

On page 8, please amend the paragraph spanning lines 7-14 to read as follows:

When the difference does not drop below a predetermined value (the convergence criterion), however, the difference is added S14 to the iteration image data set S11 and a new iteration start image data set R14 is calculated. Using this calculated iteration start image data set R14, representing the new iteration start image data set R10, subsequently an iteration operation is started again, at the end of which the difference is again used for evaluating the convergence and, should the convergence criterion not be satisfied, the difference is again added to the iteration image data set R12 so as to form an iteration start image data set R14.

After the last line of page 8, please insert the following new paragraph:

The invention has been described with reference to the preferred embodiments. Modifications and alterations may occur to others upon reading and understanding the preceding detailed description. It is intended that the invention be construed as including all such modifications and alterations insofar as they come within the scope of the appended claims or the equivalents thereof.